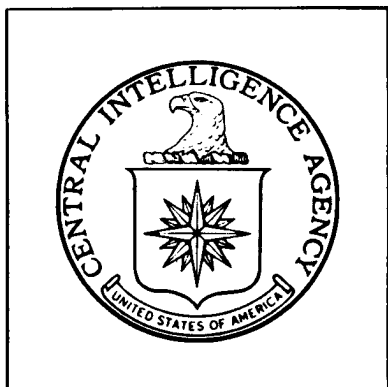


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**DIRECTORATE OF
INTELLIGENCE**

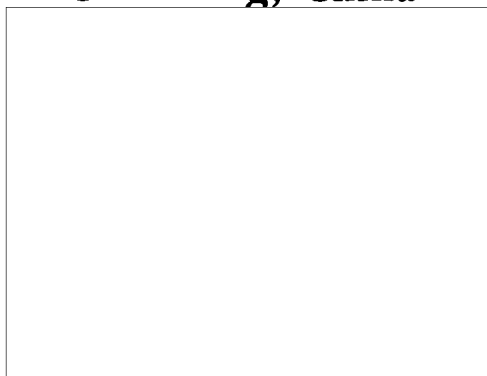
**Industrial Facilities
(Non-Military)**

Basic Imagery Interpretation Report

Chin-ning Phosphate Fertilizer Plant

(BE Name: Chin-ning Chemical Plant)

Chin-ning, China



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DATE FEBRUARY 1971

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ZSXI**CENTRAL INTELLIGENCE AGENCY
Directorate of Intelligence
Imagery Analysis Service**

INSTALLATION OR ACTIVITY NAME		COUNTRY	
Chin-ning Chemical Plant*		CH	
UTM COORDINATES	GEOGRAPHIC COORDINATES		
48RTC560365	24-42-51N 102-35-05E	25X1	
MAP REFERENCE			
ACIC. USATC, Series 200, Sheet M0496-22, 2nd ed, Feb 68, Scale 1:200,000 (SECRET)			
LATEST IMAGERY USED		NEGATION DATE (If required)	
		NA	

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* The installation name given in the data block is taken from the Basic Encyclopedia. As a result of this study, action has been taken to change the name to Chin-ning Phosphate Fertilizer Plant.

ABSTRACT

Analysis of the Chin-ning Chemical Plant on high-resolution photography shows that the primary product of the plant is superphosphate fertilizer. Additional products include sulfuric acid and possibly simple phosphate fertilizer and sodium fluosilicate. The plant also appears to process apatite ore.

When first seen in March 1962 the plant had facilities capable of producing superphosphate fertilizer and sulfuric acid. By December 1964 portions of the superphosphate plant and a second sulfuric acid plant were completed. The second sulfuric acid plant was doubled in size, a possible fluosilicic acid plant and storage silos at the superphosphate plant were completed by March 1966. By September 1967 a possible sodium fluosilicate production plant was completed. Since that time, no significant additions have been observed on coverage through March 1970.

This report includes a photograph, a process flow chart, a line drawing of the plant, and a chronological summary of construction and operational status.

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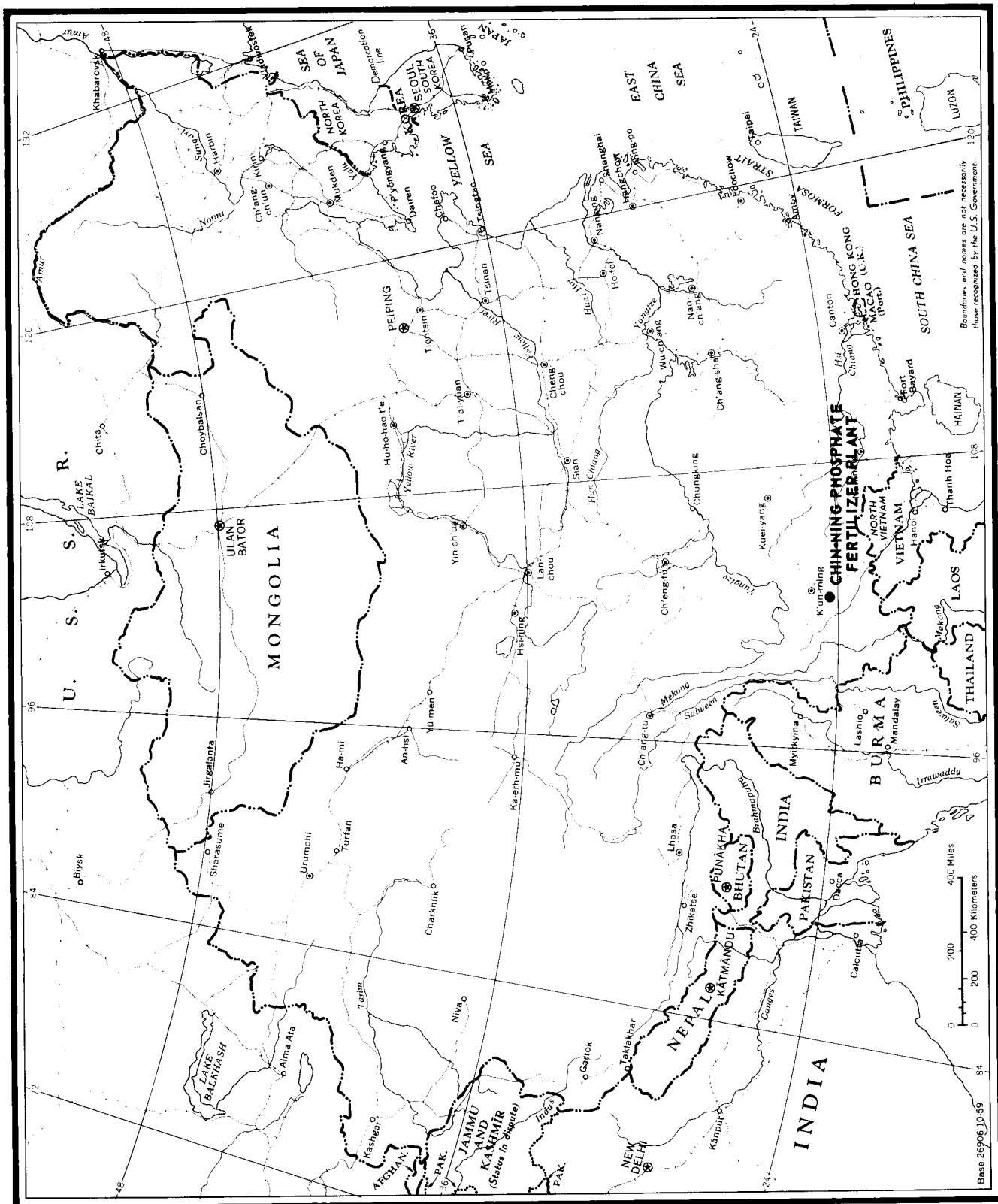


FIGURE 1. LOCATION MAP.

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INTRODUCTION

The Chin-ning Chemical Plant is located 3 nautical miles north of Chin-ning, Yunnan Province (see Figure 1). The plant is situated near the Kun-yang Rock Phosphate Mines and processes some of the ore received from the mines into phosphate fertilizers. The plant is also referred to in a collateral report as the Kun-yang Phosphate Fertilizer Plant. 1/

BASIC DESCRIPTION

Physical Features

The plant occupies an irregular-shaped area approximately 2,400 by 1,600 feet. It contains about 90 acres (see Figures 2 and 3). The plant is served by a road and a narrow gauge rail system. This rail system connects the plant to the phosphate mines to the northwest and to a small port facility on Lake Tien, 2 miles east of the chemical plant.

Operational Functions

The primary function of this plant is the production of superphosphate fertilizer. Sulfuric acid is also produced and the size of the acid facilities indicates a capacity which may be greater than is required for the superphosphate reaction. In addition, photography supports collateral information which indicates that the plant possibly processes apatite ore and possibly produces simple phosphate fertilizer and sodium fluosilicate (also known as sodium fluoro-silicate). This is an important chemical in the production of glass, rubber, aluminum, insecticides and glue, and is used to treat water and leather. It is produced by the neutralization of fluosilicic acid with sodium carbonate, or by the addition of sodium chloride to the acid. Fluosilicic acid is produced as a by-product of the superphosphate reaction if the phosphate ore contains fluorides and silica or silicates. The process flow for the products of the plant which have been identified is shown on Figure 4.

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25X1Construction and Operational Status

Construction of the first production components was completed by 1957. At that time the plant reportedly processed apatite ore and produced low-grade phosphate fertilizer. 1/

March 1962 -- The major ore handling facilities in Area E, the sulfuric acid plant (Area G), and approximately half of the support facilities were present. The operational status of the plant could not be determined from the photography. According to collateral information, in November 1962 the plant was operating and was producing sulfuric acid and superphosphate fertilizers. 1/ If this is correct, the superphosphate was produced in the probable den building (Area E, Item 3).

December 1964 -- A new sulfuric acid plant (Area H), portions of the superphosphate plant (Area E), and additional support facilities were observed complete. Both of the plants appeared to be in operation. Smoke was seen coming from the stack of the waste gas dispersal tower. It could not be determined if the probable den building in Area E was still functioning as a den building or whether it was converted to serve another purpose such as ore handling.

March 1966 -- The sulfuric acid plant (Area H) was doubled in size, major construction at the possible fluosilicic acid plant was completed (Area I), and the crushing building and storage silos at the superphosphate plant (Area E) were completed. All of these facilities appeared to be in operation.

September 1967 -- The possible sodium fluosilicate production plant (Area F), and additional support facilities were completed. It could not be determined if the overall plant was operating due to the small scale of the photography.

January 1970 -- No significant additions were observed at the plant. All of the production components appeared to be operating.

March 1970 -- No significant changes were observed at the plant. Small-scale photography precluded a determination of whether the plant was operating.

The construction chronology of the plant is shown graphically on Figure 3.

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Map

ACIC. US Air Target Chart, Series 200, Sheet M0496-22, 2nd edition, February 1968, Scale 1:200,000 (SECRET

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Documents

I/ DOD. Military Economics: Chemical Fertilizer Production,
14 December 1966 (CONFIDENTIAL)

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Requirement

COMIREX NO1
Support Number 421937

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